NAEP ALASKA NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Alaska NAEP Newsletter

Alaska Performs Above National Average for Science

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To learn more about NAEP in Alaska:

Alaska NAEP Website
http://education.alaska.gov/tls/assessment/naep.html

- See inside for details on a NAEP module for Professional Learning Communities to examine student achievement in Alaska.
- The President, Congress, and policymakers use NAEP to develop ways to improve education.
- NAEP provides a common yardstick for measuring the progress of students' education across the country.

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"An analysis of characteristics of schools participating in the 2011 NAEP shows that students who did hands-on science activities at least once a week in class scored 5 to 14 points higher than those who did fewer hands-on experiments."

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Alaska eighth-graders scored higher than the national public in the 2011 National Assessment of Educational Progress (NAEP) science assessment. Alaska's average score of 153 is higher than the national public score of 151. All 50 states, the District of Columbia, and Department of Defense schools took part in the 2011 science assessment.

Nationally, the average score for eighth-graders increased two points from 2009 to 2011, from 149 to 151. The score gap between White and Black students and White and Hispanic students also narrowed from the 2009 administration.

Sixteen states increased their scores from 2009 to 2011. Alaska did not participate in the grade 8 science assessment in 2009.

Alaska scored lower than 23 states/jurisdictions, the same as 8, and higher than 20 (see map on page four).

The only other time Alaska participated in a NAEP science assessment was 1996. Alaska's average score of 153 in 1996 for grade 8 was also higher than the national public score of 148. Starting in 2009, NAEP assessed a new science framework. There is no trend link, therefore, before 2009 with previous science assessments.

The 2011 science assessment was administered from the last week of January until the first week of March in 2011. About 2,100 grade 8 students in Alaska took part in the science assessment, which is administered by the National Center for Education Statistics.

NAEP Science 2011 was added to the NAEP testing cycle so that comparisons could be made with the performance of U.S. students on the latest *Trends in International Mathematics and Science Study* (TIMSS). The study, which be released later this year, will also include the results of the NAEP eighth-grade mathematics assessment, allowing states and the public to gauge student performance in both subjects in relation to other nations. Find more information about the TIMSS study on page two.

Find the entire 2011 science report at http://nationsreportcard.gov/science_2011/.

NAEP Reading Item Maps and Percentile Graphs Promote Discussion of Alaska Student Achievement

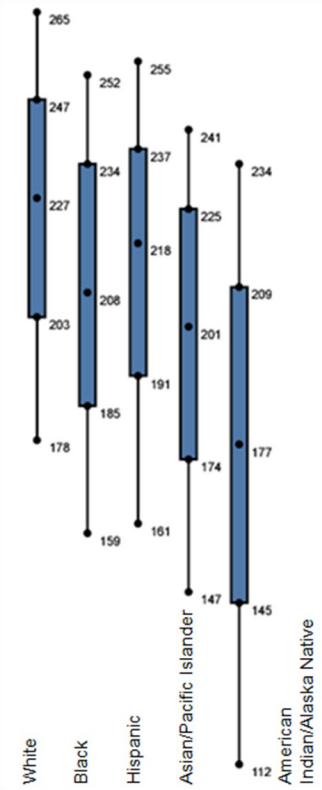
Many states have raised the rigor of their English language arts and math standards by adopting new standards. Alaska has also adopted a new set of standards that increase the rigor of its current standards. (The new standards can be viewed at https://education.alaska.gov/tls/assessment/GLEHome.html.)

NAEP reading item maps and percentile graphs can help to frame the question of where Alaska is now in terms of student achievement and what needs to be done to raise student achievement.

NAEP item maps show what students are achieving by showing actual test questions or items that students answer correctly at different score points. For instance, the reading item map gives an example of a question that grade 4 students who scored a 211 on NAEP probably answered correctly.

NAEP percentile graphs show achievement gaps by showing the scores for students at the 25th, 50th, and 75th percentiles for each ethnic group. Teachers can see the types of questions students answer correctly at different scores. The percentile graph at right is for Alaska's 2011 grade 4 reading results.

Looking at the percentiles graphs and types of questions students answer correctly at the various scores can lead to discussions of the following questions:



- What skills do students demonstrate when they answer the question correctly?
- What does the difference in the types of questions answered suggest about the achievement gaps?
- What are the challenges for increasing academic rigor for all students?

PowerPoint presentations and materials using NAEP item maps and percentiles graphs are posted at https://education.alaska.gov/tls/assessment/naep.html. Educators in professional learning communities can use the presentation and materials to examine student achievement in Alaska using 2011 NAEP results. The presentation and materials are designed to take about 45-60 minutes to examine and discuss student achievement in Alaska using NAEP data.

2011 NAEP Will Allow International Math and Science Benchmarking for States

NAEP is conducting a special linking study as part of the 2011 administration that will allow states to see how they compare to other countries that take part in the Trends in International Mathematics and Science Study (TIMSS). The NAEP-TIMSS linking study will give states projected TIMSS scores based on their grade 8 NAEP math and science scores.

TIMSS was first administered in 1995 and is in its fifth cycle. In 2011, more than 60 countries participated in TIMSS. The data from the linking study will be used to evaluate how the knowledge and skills of U.S. students compare to those of their peers in other participating countries.

The projected grade 8 TIMSS scores for math and science will be released at the end of 2012 or beginning of 2013.

The 2011 administration was the first time that all fifty states took part in the science assessment. The students at grade 4 took only the reading and mathematics NAEP assessments in 2011.

TIMSS USA

Trends in International Mathematics and Science Study (TIMSS) 2011

ies NATIONAL CENTER FOR EDUCATION STATISTICS

NAEP Allows Comparisons between States and the Nation for a Variety of Demographic Variables

The table below shows how Alaska students for each ethnic group did on the 2011 science assessment compared to the same ethnic group in other states. For example, it compares how White students in Alaska did compared to White students in other states. The total of states/jurisdictions for each row varies because (except for White students) not all states/jurisdictions have enough of a population to report results for each ethnic group.

Ethnic Group	States/Jurisdictions Scoring Higher than Alaska	States/Jurisdictions Scoring the Same as Alaska	States/Jurisdictions Scoring Lower than Alaska
White	4	16	31
Black	2	29	8
Hispanic	1	22	21
Asian/Pacific Islander	19	6	1
American Indian/ Alaska Native	1	9	0

As explained on page four, the NAEP Data Explorer allows users to examine all NAEP data. For example, in addition to scale scores and achievement level percentages (percent of students performing at basic, etc.), it also shows percentages for various demographic variables for all states and the nation. The table below shows the percentage of English Language Learners (ELL) for each ethnic group in Alaska compared to the nation for the 2011 science assessment.

Percentage of ELL Students	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaska Native
National Public	Rounds to zero	1%	20%	13%	4%
Alaska	1%	7%	17%	29%	26%

National Science Data Shows Differences in Characteristics of Lower– and Higher– Performing Students

Profiles of students scoring at the lower end of the scale (below the 25th percentile) and those scoring at the higher end (above the 75th percentile) show how the two groups differed in regard to demographic characteristics and experiences.

Among eighth-graders who scored below the 25th percentile (i.e., below a score of 131) in 2011,

- **27%** were White, **31%** were Black, and **35%** were Hispanic;
- **72%** were eligible for free/reduced price school lunch;
- **55%** agreed or strongly agreed that they liked science;
- **25%** agreed or strongly agreed that they do science-related activities that are not for school-work; and
- **68%** had teachers who reported students do hands-on activities in science class once a week or more.

Among eighth-graders who scored above the 75th percentile (i.e., above a score of 176) in 2011,

- **76%** were White, **4%** were Black, and **10%** were Hispanic;
- **21%** were eligible for free/reduced price school lunch;
- **83%** agreed or strongly agreed that they liked science;
- **38%** agreed or strongly agreed that they do science-related activities that are not for school-work; and
- **77%** had teachers who reported students do hands-on activities in science class once a week or more.

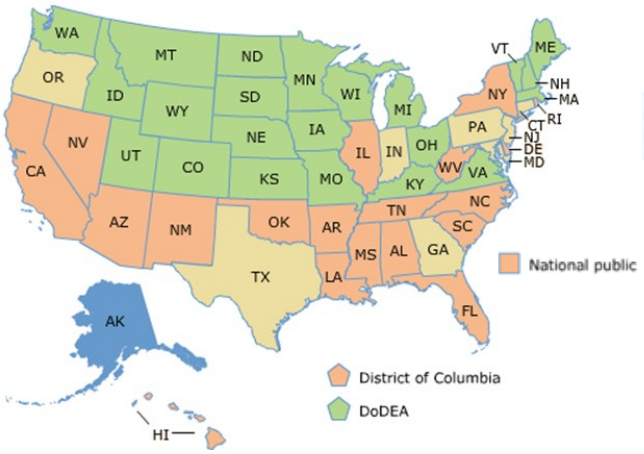
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Science Assessment.

NAEP Illustrates Performance among States

All NAEP data is available on the NAEP Data Explorer at http://nces.ed.gov/nationsreportcard/statecomparisons/. The NAEP Data Explorer produces maps that are color coded to show which states/jurisdictions have statistically higher scale scores, the same scale scores, and lower scale scores compared to a focal state. Similar maps can be produced for all variables reported by NAEP. The online map is interactive; different states can be chosen as the point of comparison with the click of a mouse. The NAEP collects scores for 52 jurisdictions: the 50 states, the District of Columbia, and Department of Defense schools.

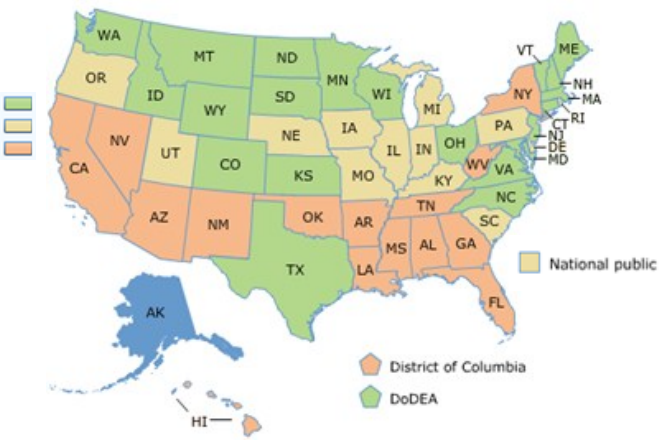
- Focal state/jurisdiction
- Green indicates Alaska's score is lower than the specific state/jurisdiction
- Yellow indicates Alaska's score is not significantly different that the specific state/jurisdiction
- Orange indicates Alaska's score is higher than the specific state/jurisdiction

2011 Grade 8 Science



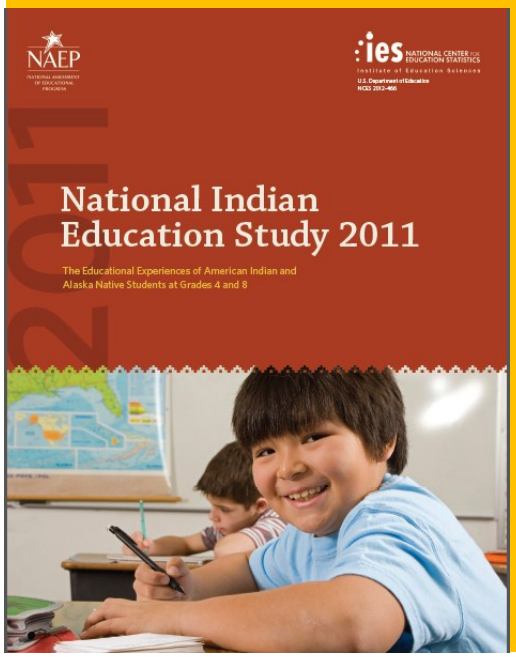
The average scale of Alaska (153) was
- lower than those in 23 states/jurisdictions
- not significantly different from those in 8 states
- higher than those in 20 states/jurisdictions

2011 Grade 8 Mathematics



The average scale score of Alaska (283) was
- lower than those in 22 states/jurisdictions
- not significantly different from those in 13 states
- higher than those in 16 states/jurisdictions

Study Describes Educational Experiences of Students



American Indian/Alaska Native (AI/AN) students are only 1 percent of the nation's students and information for this group of students is frequently missing from education data sets. The National Indian Education Study (NIES) is administered as part of NAEP to allow more in-depth reporting on the achievement and experiences of AI/AN students in grades 4 and 8. Below is an excerpt from the report. The NIES 2011 report can be found at http://nces.ed.gov/nationsreportcard/nies/.

Fifty-six percent of AI/AN fourth-graders have at least some knowledge about their tribe or group

AI/AN students' responses to questions regarding how much they know about their AI/AN history and traditions provide some insight into their acculturation and self-identity. In 2011, a total of 56 percent[5] of AI/AN fourth-graders reported knowing some or a lot about their tribe or group's history, traditions, or crafts, and 44 percent reported knowing a little or nothing (table 9). Among the four responses students were able to choose from, the smallest percentage of students (15 percent) reported knowing nothing at all. In comparison to 2009, a higher percentage of students reported having some knowledge about their tribe or group in 2011.

Table 9. Percentage distribution of fourth-grade AI/AN students, by their responses to a question about their AI/AN heritage: 2009 and 2011

How much do you know about your American Indian tribe or Alaska Native group (history, traditions, or arts and crafts)?	Nothing	A little	Some	A lot
2009	15	30	30*	25
2011	15	29	33	24

* Significantly different ($p < .05$) from 2011.
NOTE: AI/AN = American Indian/Alaska Native. Detail may not sum to totals because of rounding.